

ENGINE STORAGE

STURTEVANT

Mill Company Boston

Catalogue



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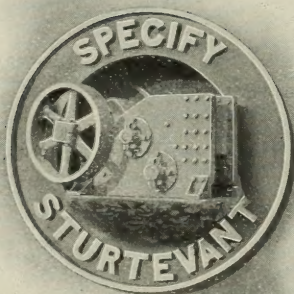
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CRUSHERS



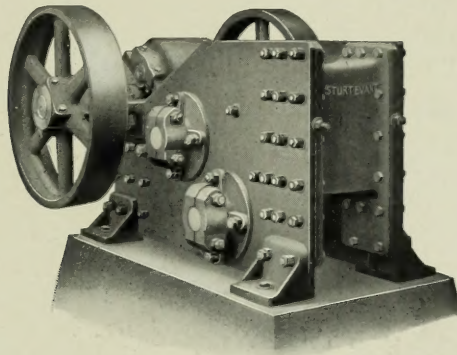
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STURTEVANT MILL CO.



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SALES REPRESENTATIVES OF PATENTED

CRUSHING, GRINDING, SCREENING, MIXING,
SACKING AND WEIGHING MACHINERY

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THE STURTEVANT PLAN

Because performance equals expectation, a Sturtevant machine may be bought, by those unacquainted with it, on the following terms:

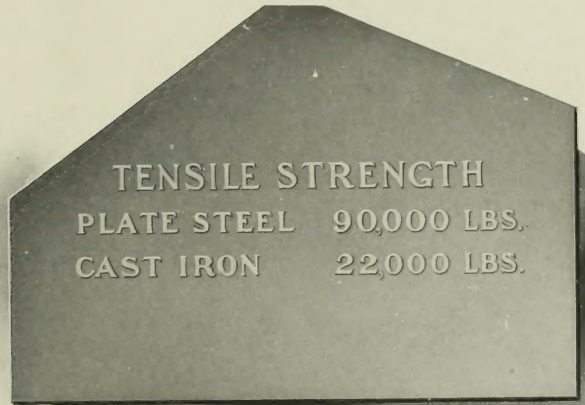
“It may be agreed that the purchaser shall set it at work on dry material promptly after arrival, and if within thirty days after it is received the purchaser does not find it satisfactory in every respect, it can be returned to seller's works, in good condition, ordinary wear excepted, and with freight prepaid, and the buyer's obligations hereunder thus be closed and ended. If buyer's option to return is not availed of as is herein provided, the machine must be paid for as agreed.”

Every prospective purchaser is invited to send samples (transportation prepaid) to our Testing Department at Harrison Square, Mass., which is equipped with machines of full size. Here, without charge, tests may be personally conducted, and as thoroughly as required to determine the adaptability of Sturtevant machinery. Trials are frequently ordered, and results reported. This department is largely availed of, and decisions of much importance to buyers are frequently made and costly errors avoided.

The experience gained in producing, for so many years, rock reducing machinery of the highest class has a real value. Designs tested by thousands of users, and faults discovered and corrected form a strong basis for confidence. It is only gradually that the best machines are evolved. That they do not break is because we have been taught where to make them strong; that they give maximum outputs is because experience has taught how to make them effective. What each will do is known, and in most cases what each will not do. This company sells no machine that is not believed to be fit for its purpose. Machinery that is sure to run well is certain of appreciation.

STURTEVANT MILL COMPANY
HARRISON SQUARE BOSTON MASSACHUSETTS

STURTEVANT PLATE STEEL CRUSHERS



THE STURTEVANT MILL COMPANY has for seven years made double cam and roll actions, for rock breakers required to do really heavy work. The following reasons will interest engineers and appeal to the common sense of everybody, viz:

Double Cams actuating a large roll represent the simplest, most powerful and slowest moving mechanical device known. It is almost frictionless, absolutely smooth and noiseless, and unharmed by dust or grit. Each point indicates a machine easy to drive and durable beyond comparison. What other crushing mechanism can compare with this in lasting qualities, efficiency, or power?

Rolled Steel Frames are now exclusively used for all Sturtevant Cam and Roller Crushers, because neither cast iron nor cast steel can safely withstand the enormous pressures of the little cam acting on a large roll. But why, then may be asked, are such strong actions needed? The answer is easy—strong and powerful running ensures smooth and steady action, with less shock and less vibration. Shocks represent loss and damage to all mechanism.

Rolled steel plates, having more than four times the strength of cast iron and twice the dependable endurance of cast steel, mean something to users of Sturtevant Crushers. Rolled steel plates have no flaws and cannot be broken or pulled apart. They are absolutely unbreakable. Sturtevant Patent Crushers have a strength never questioned by those who use or even see them in action.

They Cost Users Less than other Rock Breakers. Why? Because they weigh less. Because freight charges are often lessened one-half. Because two men can handle very large machines without unusual appliances, and because no part is too heavy to be carried in a farm wagon. Road building and bridge strengthening are generally unnecessary. Railroad freights, and the hauling in costs, and the setting-up expenses of a large cast iron Breaker of greatly inferior ability frequently exceed the price asked at the shop for a Sturtevant Patent Rolled Steel Machine.

STURTEVANT PLATE STEEL CRUSHERS

Sturtevant Crushers are throughout more nearly "unbreakable" than any others. Plate Steel is used today wherever great strength and reliability are required. What would be thought of a designer of bridges buildings, steamships, boilers, etc., etc., who substituted brittle cast iron for steel? Yet in no construction whatever is there greater need of strength and reliability than in a Rock Breaker which does absolutely the most trying work known; often operating day and night in mines hundreds of miles from the nearest machine shop, and where an accident to the Breaker closes the plant. The best materials are none too good. Plate Steel comes the closest to perfection of any substance yet discovered for crusher frames.

Plate Steel, correctly used, is indeed ideal. No just argument can be made against it. Old stories of lack of rigidity were undoubtedly true of the first Plate Steel Crushers of cheap manufacture, but with the Sturtevant patented designs, lack of rigidity is the most unlikely charge that can be brought. Their Rigidity is evident to the most casual observer.

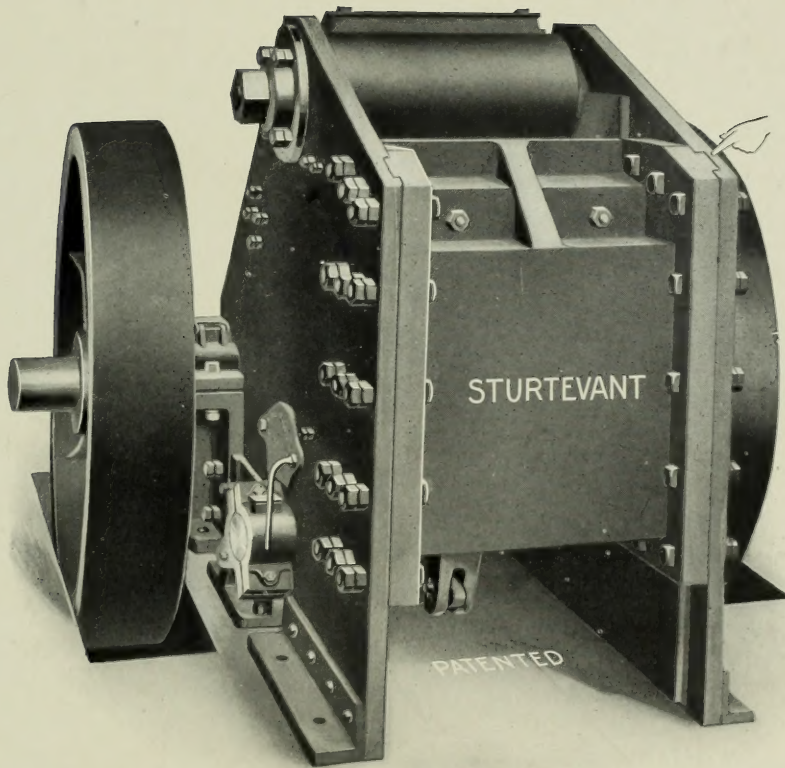
REASONS FOR STURTEVANT PLATE STEEL

When the old Blake type of Pitman was superceded by the simpler, frictionless cam and roll, this improved action, was found so much more powerful that cast iron frames were entirely unfit and breaks frequently occurred. Forced to find something stronger than cast iron, attention was called to cast steel, but this material could not be obtained without flaws. Sturtevant Plate Steel was then substituted, and proved to be absolutely unbreakable. It is not probable that more dependable Crushers will ever be built.

MECHANISMS

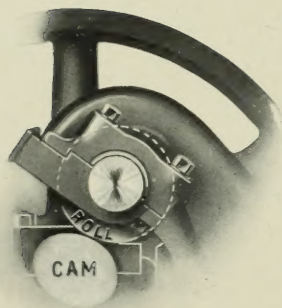
A small cam is formed on opposite sides of a massive high carbon steel shaft. These two small cams are revolved against a large roll which the cams raise twice at each revolution of their shaft, and of course, cause the jaw to nip its rock twice at each revolution. Thus at one-half the usual speed of Crushers, Sturtevant's make as many jaw-nips as any others, therefore they do as much work at half speed as any Blake Breaker in existence. The Cam and Roll is the most powerful mechanical movement known, and possesses the following well-known advantages. The cam acts on the roll without any noise or jar whatever, and almost without friction, because the large roller rolls. Neither cams nor roll are affected by dust or grit. This accounts for the well-known remarkable durability of cams and rolls in all mechanical devices.

STURTEVANT PLATE STEEL CRUSHERS



Sturtevant Rolled Steel Plate Breaker

STURTEVANT PLATE STEEL CRUSHERS



COMPARISONS

Compare this Sturtevant movement with that of the Blake or any other Pitman Breakers, where no amount of care can prevent pounded out bearings — shortened stroke by wear and thereafter diminishing capacity — because inevitable wear loosens all the bearings.

Every Blake bearing is speedily cut and damaged by grit, which cannot be excluded.

The Sturtevant Double Cam and Roll is as nearly perfect as any mechanism we know of. We should be glad if any user will suggest how it can be improved. It is usually conceded by engineers to be the last word in this class of machines. Ask users.

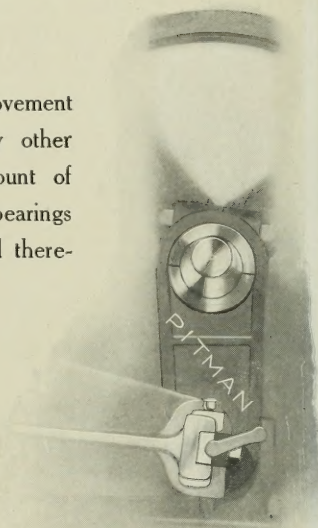
Good Crushers should be fool-proof. They need to be, because they are the most neglected machines. They do the hardest work covered with grit and dust, and have such rough usage by unskilled labor as few mechanisms can withstand.

The introduction of the double cams and roll solved immediately the most serious problems of crusher construction. Running without jar, or pound, and with a rolling action which is nearly irresistible and does not wear, and at half the speed of any other Crusher mechanism, no better device can ever be desired.

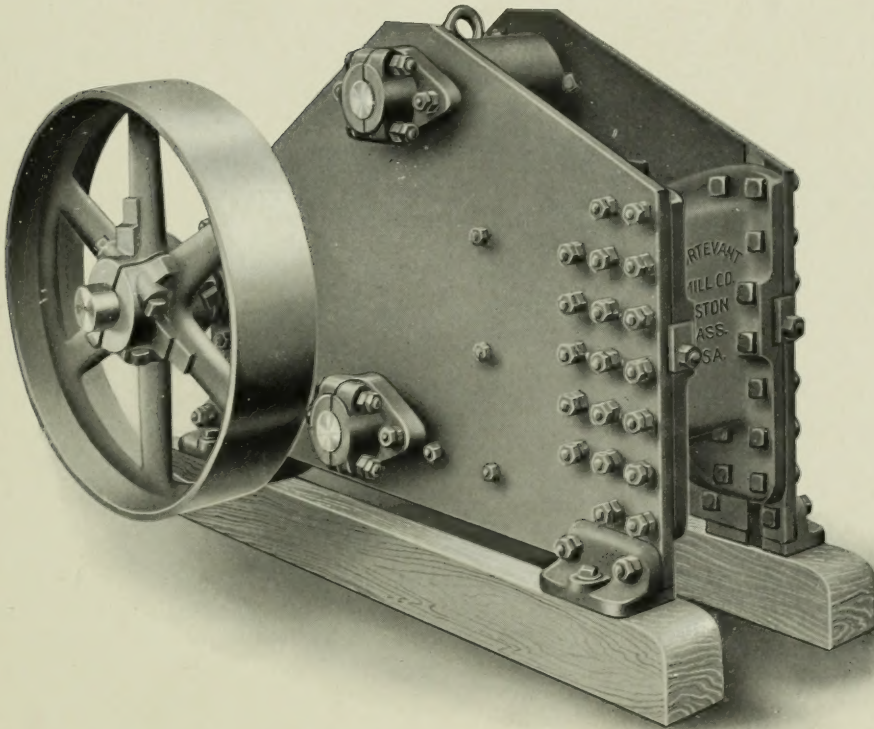
The Sturtevant small cams run upon a large roll which they lift gently and with incredible force. It can be seen that cast iron frames are entirely too brittle, unless made of such masses as could scarcely be transported by usual appliances.

As has been before suggested: "Why use such powerful cams?" The answer: To produce easy running, and regular and smooth action, it is necessary to have a great reserve of power to overcome the irregular and tremendous shocks of rock bearing. This is accomplished easily by the small cam and large roll and without danger of frame breakage, because no rock can master Sturtevant Rolled Steel Flawless Side Plates.

The ample surfaces of the cam and roll, and the long shaft bearings used in Sturtevant constructions withstand easily any force that even the powerful double cam is likely to exert. It is of no small importance to note again that the surface speed of the working parts is low, being only one half that of other crushers that give less output.



STURTEVANT PLATE STEEL CRUSHERS



Patented

Plate Steel Coarse Breaker

PORTABILITY AND SMALL COST

Because Rolled Plate Steel weighs only one-quarter as much as cast iron of equal strength, and has no brittleness, and has twice the toughness of even cast steel, it is evident that the use of plate steel can reduce the weight of parts more than one-half. The first cost, therefore, is less, and transportation, cartage and installing expenses are greatly less. Often hundreds of dollars are saved over other crushers in moving and setting a large Sturtevant machine. For instance: Unloading a common type breaker, and carting from the cars to its foundation, and installing (say 60,000 lbs. or even 30,000 lbs.) requires special wagons and hoisting appliances difficult to obtain in country districts.

STURTEVANT PLATE STEEL CRUSHERS

ECONOMIES

When the farm wagons have carried the parts of a large Sturtevant Crusher in, without requiring ordinary roads to be rebuilt, or bridges strengthened, and the Crusher is in place and assembled, it is found that it has cost a great deal less, and is a machine far stronger and more dependable than any clumsy cast iron Breaker. Weight in Crushers does not necessarily mean strength or reliability, but on the contrary the heavy cast iron Crusher means **COST, COST, COST**, weight to railroad, weight on railroad, weight from railroad, weight over country roads, weight to carry to foundations. The old Pitman Crusher actions start in to shake as soon as set to work, and wear and tear quickly begin to keep the repair shop busy. The Sturtevant is durable. Ask any user.

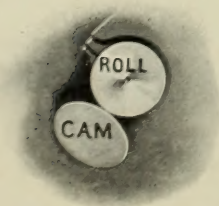
The savings to the buyer of a Sturtevant Breaker begin (in actual cash reduction for transport) as soon as the Crusher leaves the works; this explains why users buy these strong machines, and why it pays the Sturtevant Company to make them. No one can afford to buy an old-timer. Savings are first profits and often amount to more than a 50% discount from the shop price of a machine that has to go far, or into difficult countries, or where work is exceptionally hard. Sturtevant designs are patented and cannot be duplicated.

SLOW SPEED

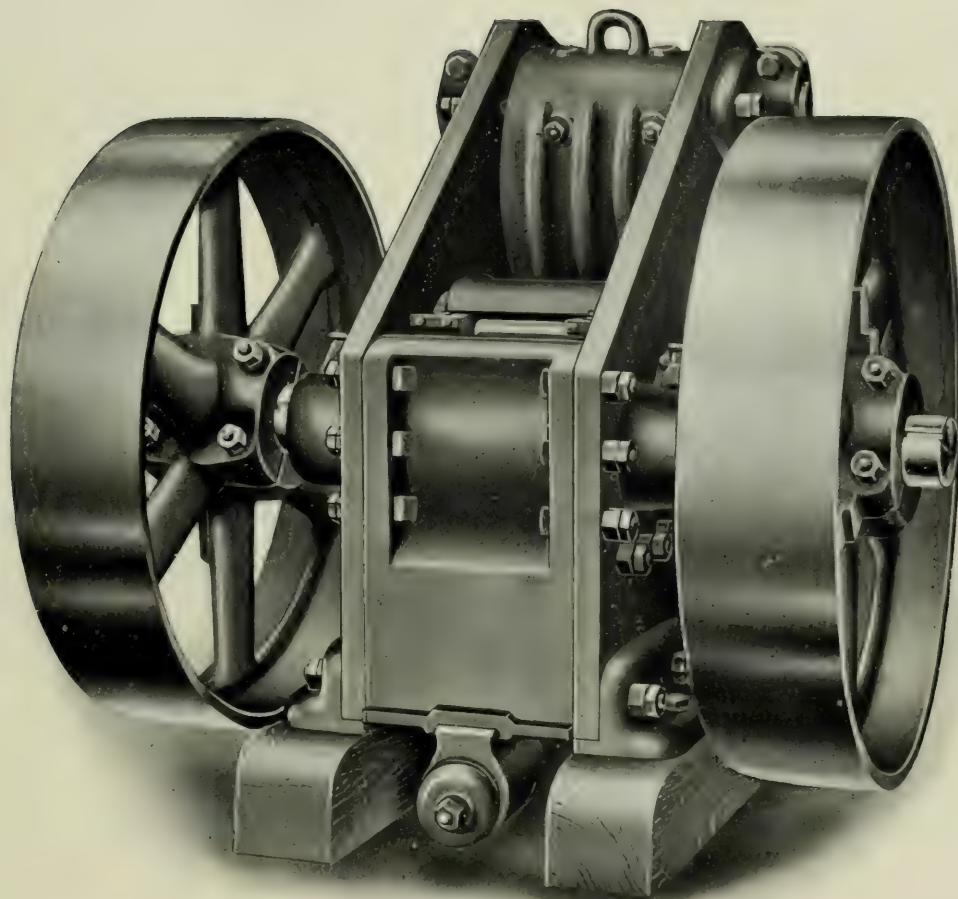
The Sturtevant Plate Steel Crushers will soon call to your attention the fact that they run at one-half the speed of others to make equal jaw reciprocations and that they use less power. Is not the danger of hot bearings reduced? How does the lessened vibration of the slow speed cam and roll, which so greatly reduces wear, strike you?

INCREASED CAPACITY

But the smoothness of the double cam action gives another important advantage. Large cam and roll machines can safely run at 150 revolutions, or even as high as 170 revolutions per minute (and they do it with less vibration than the smallest Blake Breaker); but taking the lower shaft speed mentioned, and counting two jaw nips to each revolution, (making 300 nips per minute), then, comparing with this a Blake or Dodge Crusher of equal size, which cannot run safely at more than 250 revolutions, it will be seen that a Sturtevant Crusher in a day's work nips its rock 36,000 more times than a jaw and toggle Crusher of equal size; consequently it is perfectly clear that it has always an output of from 20% to 30% greater than Crushers of the Blake or Dodge types; and yet runs only a little over half as fast. Slow speed rolling friction and the largest bearing surfaces used in any Rock Breakers promote durability.



STURTEVANT PLATE STEEL CRUSHERS

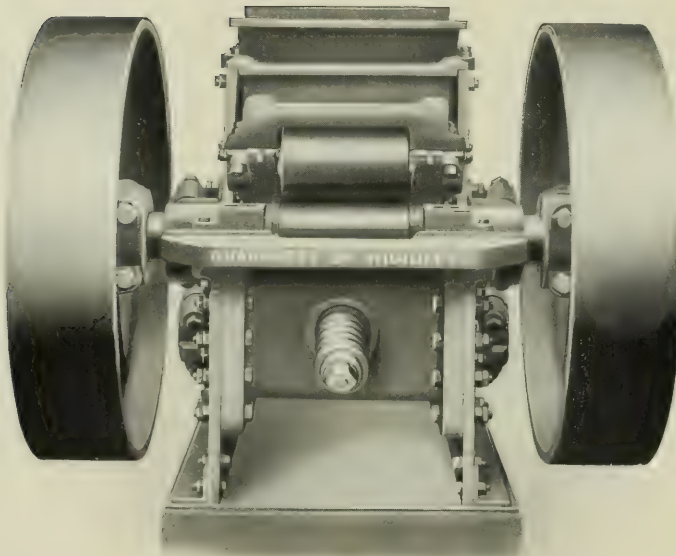


Patented

Plate Steel Rock and Ore Breaker for 2 inch Crushing.

Notice the Strong Back Casting which holds the shaft and bearings entirely independent of the frame. These bearings cannot get out of alignment.

STURTEVANT PLATE STEEL CRUSHERS



Patented

**Rear View of Rock and Ore Smasher and Roll Jaw Fine Crusher
for intermediate and fine crushing**

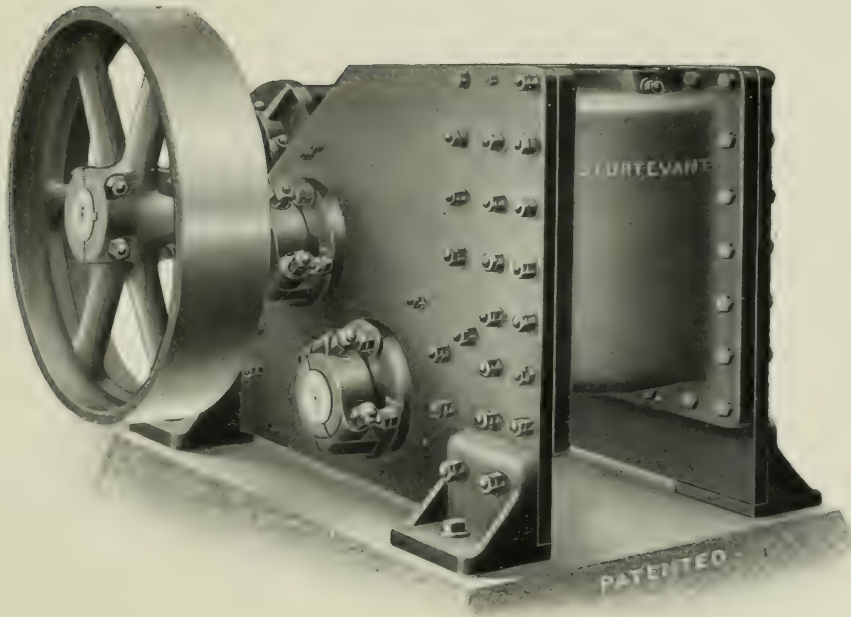
PATENTED IMPROVEMENTS

Sturtevant Crushers are distinguished from all others by their Rolled Steel side plates, combined with patent massive front and rear castings, which hold the plates as rigidly at the back as at the front, and absolutely prevent any deformation of the frame, no matter how hard the crushing conditions.

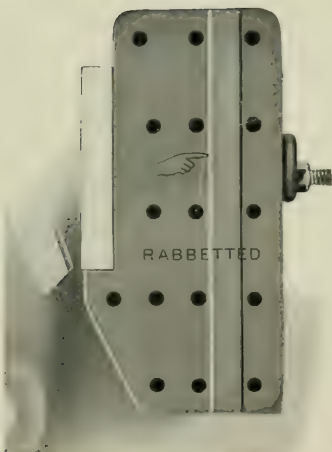
The massive rear casting carries the driving shaft in bearings absolutely independent of the frame. The driving shaft can never get out of alignment.

These and other features are carefully protected by patents, and it is safe to say that no other Crushers can be made as rigid and dependable even at greatly increased weight and cost.

STURTEVANT PLATE STEEL CRUSHERS



**Plate Steel Rock and Ore Smasher and Roll Jaw Fine Crusher
for intermediate and fine crushing**



The side plates are bolted together, but these bolts take no stress of rock breaking because the stationary casting is rabbetted to the side plates and takes all crushing shocks; the bolts merely bind the parts together. Sturtevant Crushers have only one toggle. This has almost no motion, therefore, its wear is trifling. It is a breaking piece; no other part can be strained even by the powerful cam and roll.



STURTEVANT PLATE STEEL CRUSHERS

STURTEVANT CRUSHERS ARE OF THREE TYPES:

First:—BREAKERS:—These are only for coarse work; they reduce large rock with jaws set to 2 inches: or they may be set as wide as 6 inches.



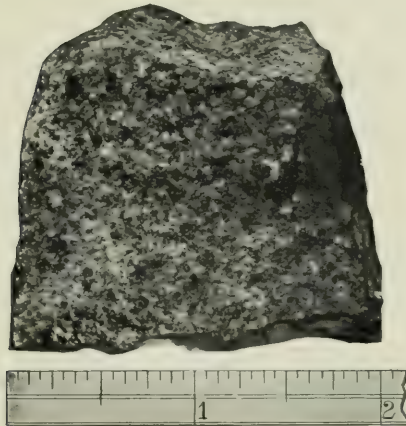
Second:—SMASHERS:—These also take in large rock and can reduce to below 2 inches and jaws may even be set as close as 1 inch on many materials.



Third:—ROLL JAW FINE CRUSHERS:—These take in large rocks and the jaws may often be set as close as $\frac{1}{2}$ inch.

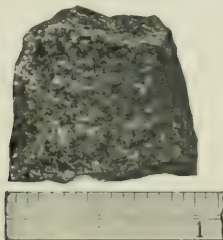


STURTEVANT PLATE STEEL CRUSHERS



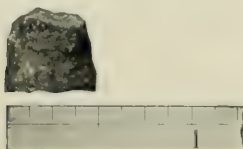
2 inch (Coarse) Crushing

This cut represents the fine work of Sturtevant Breakers.



1 inch (Intermediate) Crushing

This cut shows the fine work of Sturtevant Smashers.

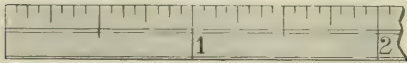
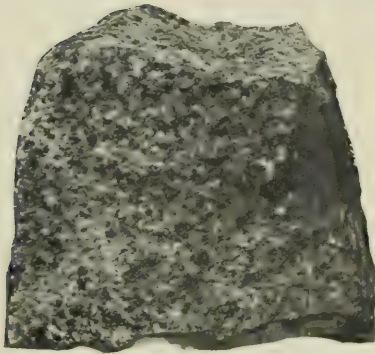


1-2 inch (Fine) Crushing

This cut shows the fine work of Roll Jaw Fine Crushers.

STURTEVANT COARSE BREAKERS

STURTEVANT STEEL ROCK AND ORE BREAKERS FOR COARSE WORK



2 inch Crushing

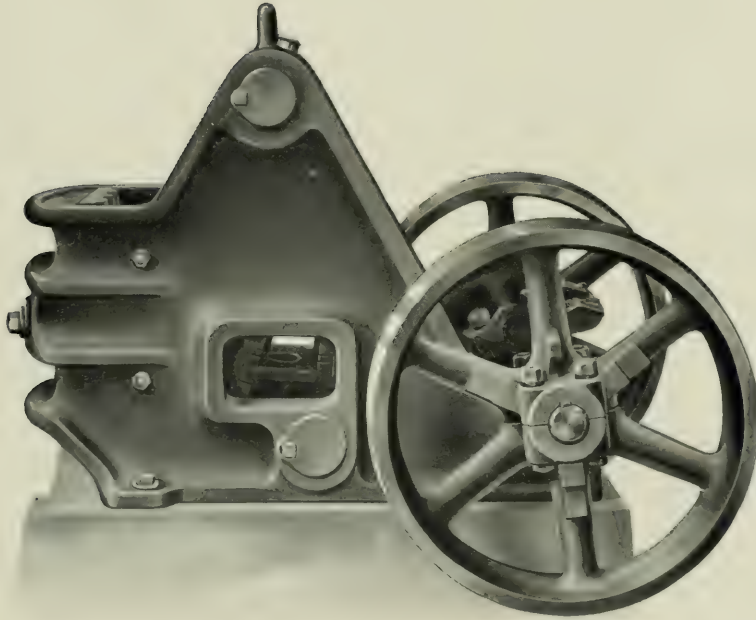
Large Coarse Breakers can generally only break down large rock to 4" or possibly 2" (coarser than 4" also, but only if specially ordered). The smaller machines of this type are capable of crushing as fine as 1 ½".

The action of these Coarse Breakers is different from that of Intermediate and Fine Crushers. It will be noticed (by the sectional cut opposite) that in these Breakers the moving jaw is pivoted above, bringing the greatest jaw motion at the discharge. Thus, for taking in great pieces of hard rock the smallest motion and greatest lever-

ages are used on the largest pieces. As they are crushed and work down the jaws toward the discharge, the motion is ever increasing. For this reason, a Breaker of this class should never have its jaws set finer than 2" (except in the small sizes, when 1 ½" is the limit). When used as stated, these Coarse Breakers do not clog and have a great output and minimum wear.

At the end of this catalogue will be found complete specifications regarding these machines.

STURTEVANT STEEL BREAKERS



Sturtevant Steel Rock and Ore Breaker
For $\frac{1}{2}$ Inch to $1\frac{1}{2}$ Inch Crushing

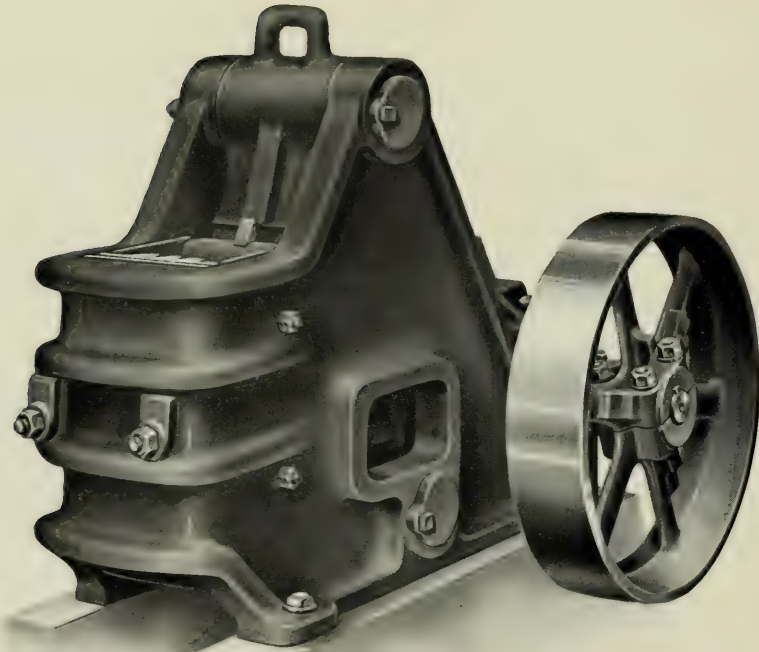
The driving shaft is set very low in the frame, and as the double cam and roll action, gives two jaw crushing strokes to each revolution, as in our other crushers, the machine runs at only half the speed of others to obtain the same output. Slow speed means durability and no hot boxes.

Also this construction gives complete accessibility. The jaws are reversible both ways; the adjustment is simple, and in fact the whole machine is as near "fool proof" as it is possible to build one.

SPECIFICATIONS

Size Jaw Opening Inches	Capacity in Tons per Hour Jaws Set to Close to 2'	Horse Power Approx.	Speed Rev.	Pulley In.	Approx. Weight of Heaviest Piece	Approx. Weight Net	Approx. Weight Gross	Code word
8 x 10	6 to 10	10-12	160	30 x 6	1370	3500	4000	Bligo

STURTEVANT STEEL BREAKERS



Sturtevant Steel Rock and Ore Breaker
For $\frac{1}{2}$ Inch to $1\frac{1}{2}$ Inch Crushing

THE above illustration shows our all steel 8 x 10 Rock Breaker. This remarkable little machine is built to fill a vacancy in our present line.

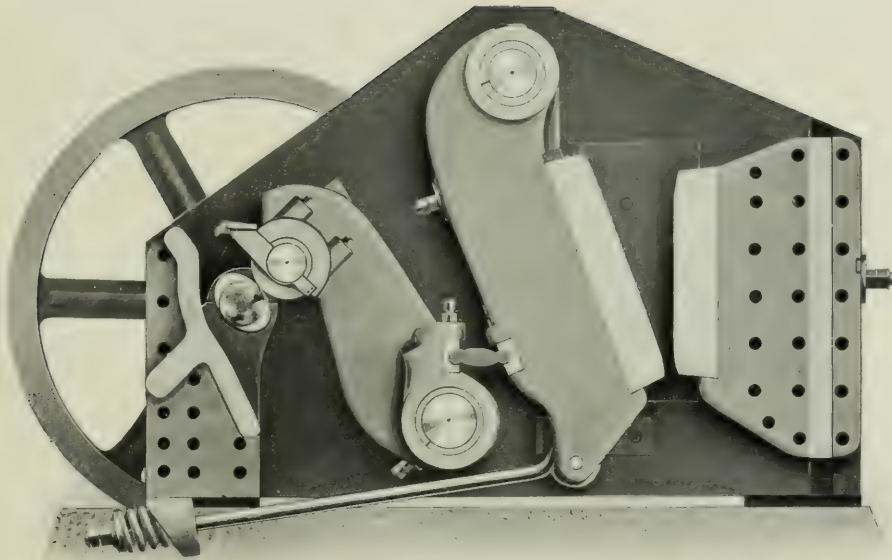
We have many calls for a small Crusher that will take large rocks and crush them fine, and yet that can be sold for a reasonable price. You will understand that this is a difficult proposition because the strength must be in direct proportion to the size of rock fed.

This machine crushes any rock that can be nipped between its 8" x 10" jaws, and it can be set to reduce as fine as $\frac{1}{2}$ ", or to break as coarse as $1\frac{1}{2}$ ".

Its Steel Construction renders it practically unbreakable and therefore suitable for the hardest work. Please note that the frame is carried high. The leverages are enormous, and the motion of the jaw can be regulated by shifting the toggle seat up or down.

This machine is a great favorite—is capable of doing more work within the limits specified than any small breaker with which we are acquainted.

STURTEVANT COARSE BREAKERS



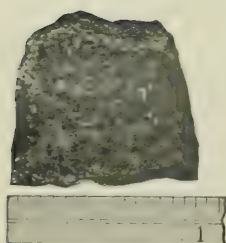
PATENTED

**Sturtevant Plate Steel Rock and Ore Breaker for 2 inch crushing,
and may be set for coarser work.**

Note the massiveness of important parts, lightness of others, rigidity and great strength everywhere. The flawless Rolled Plate Steel sides are locked in position by the rabbetting, thus relieving the bolts. No rock can "phase" this machine.

The Swing Jaw and Rocker Arm are of Cast Steel and with the Double Cam and Roll make the vitals strong and powerful beyond criticism.

STURTEVANT ROCK AND ORE SMASHERS



1 inch Crushing

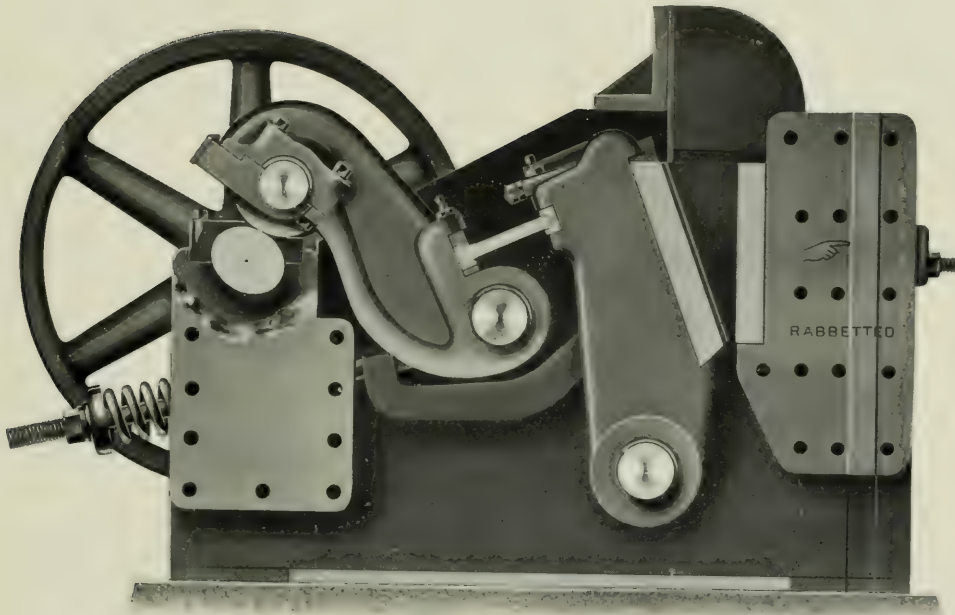
Intermediate Crushers (Smashers) differ from coarse or preliminary Rock Breakers in jaw action. The sectional view on opposite page shows that the moving jaw, instead of being pivoted above is pivoted at the bottom, thus giving the greatest motion at the top, or receiving opening, and the least motion at the discharge. This change of action necessitates construction requiring much greater strength. Rolled Plate Steel is the only material that can properly withstand the enormous strains required for really fine reduction.

These machines crush with jaws set apart from $1\frac{1}{2}$ " to $\frac{3}{4}$ " and they produce a much more even grade of output than Coarse Breakers, because the jaw motion at the discharge is less; but in Sturtevant Crushers it is quicker and the material is nipped more times before exit, and is thus more finely broken. It will be noticed that the pin which acts as a fulcrum to the moving jaw is placed well down in the machine and back of the discharge. This gives a slightly rolling and downward action, which hastens discharge and does much to prevent clogging when working difficult materials.

The toggle only will break should an uncrushable substance enter the machine. The motion of the jaws may be regulated by the adjustment of the toggle.

The jaw plates are of Manganese Steel; the rocker arm and swing jaw are of Cast Steel. The toggle is accurately milled and the seats are of high Carbon Steel perfectly finished. These parts have very little motion, and consequently little wear.

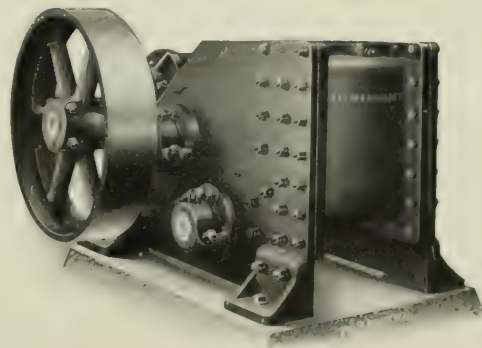
STURTEVANT ROCK AND ORE SMASHERS



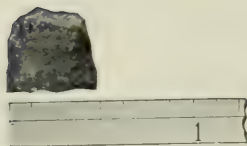
**Sectional View Plate Steel Rock and Ore Smasher
for immediate (1") Crushing**

Because smooth running cam and roll crushers can run 20 to 30% faster than others; they nip the rock many more times before it can exit from the machine, and therefore the rock is much more finely reduced than it can be by the few nips of any old-type machine.

Notice rigidity, combined strength and lightness, clean-cut design, powerful double cam, heavy rear casting, etc.



STURTEVANT ROLL JAW FINE CRUSHERS



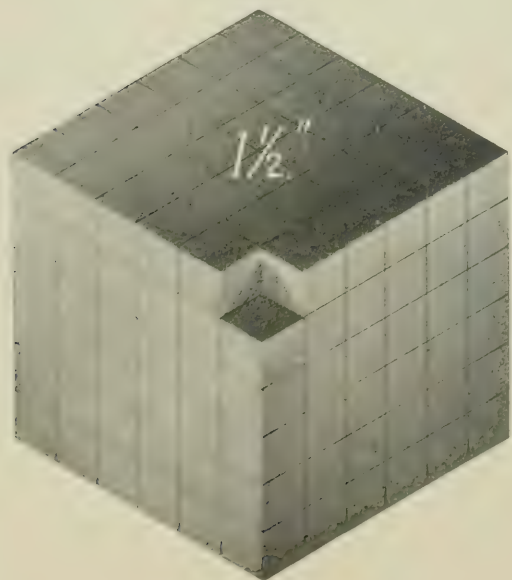
1-2 inch Crushing

These fine Crushers are subdivided into two classes—the laboratory Pitman type Crusher, entirely satisfactory in small sizes (up to the 4 x 8), and the double cam and roll crusher. This latter crushing mechanism is the most powerful known and is used for all larger Sturtevant machines doing really hard work.

The latter always have the unbreakable steel plates, and the Sturtevant patent massive cross front and cross rear castings. These Crushers are similar to the Intermediate Crushers, already described, in all sizes larger than 4 x 8; the only difference being in the shape of the jaws and the motion at the discharge. The jaw is pivoted the same as in the "Smashers," but the motion is less. They are, except on packy material, often set, even in the larger sizes, as close as $\frac{1}{2}$ ". They produce an unusually fine and uniform product.

Smooth jaws are used in all fine Crushers, and the same downward action in the swing jaw, thus making the jaw surfaces alive, and allowing material to rapidly pass.

Roll Jaw Crushers, in the very small sizes (up to the 4 x 8) deliver freely with jaws set as close as $\frac{1}{4}$ ", and in the laboratory sizes they do good work when set to $\frac{3}{8}$ ". These are the only jaw and toggle Crushers capable of the really fine reduction of hard substances.



Measure
this large
block; it
contains
216 of
these



WHAT REALLY FINE CRUSHING IS

Few people realize that $\frac{1}{4}$ " cubes are 216 times smaller than blocks of $1\frac{1}{2}$ " size. Therefore a Crusher reducing to $\frac{1}{4}$ " is crushing 216 times as fine as usual. The illustration strikingly verifies this statement.

STURTEVANT ROLL JAW FINE CRUSHERS

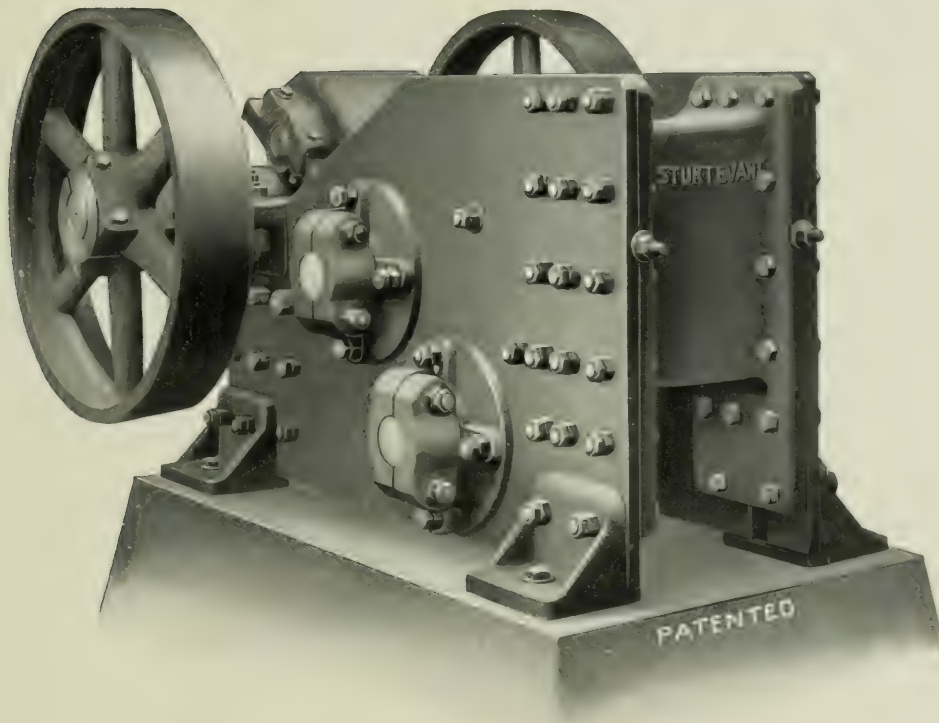
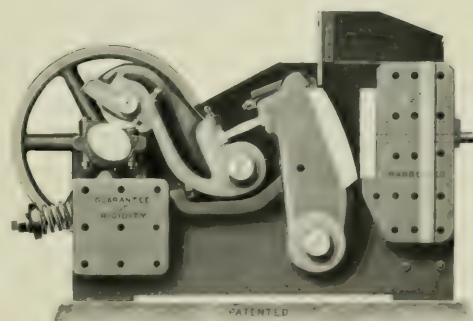


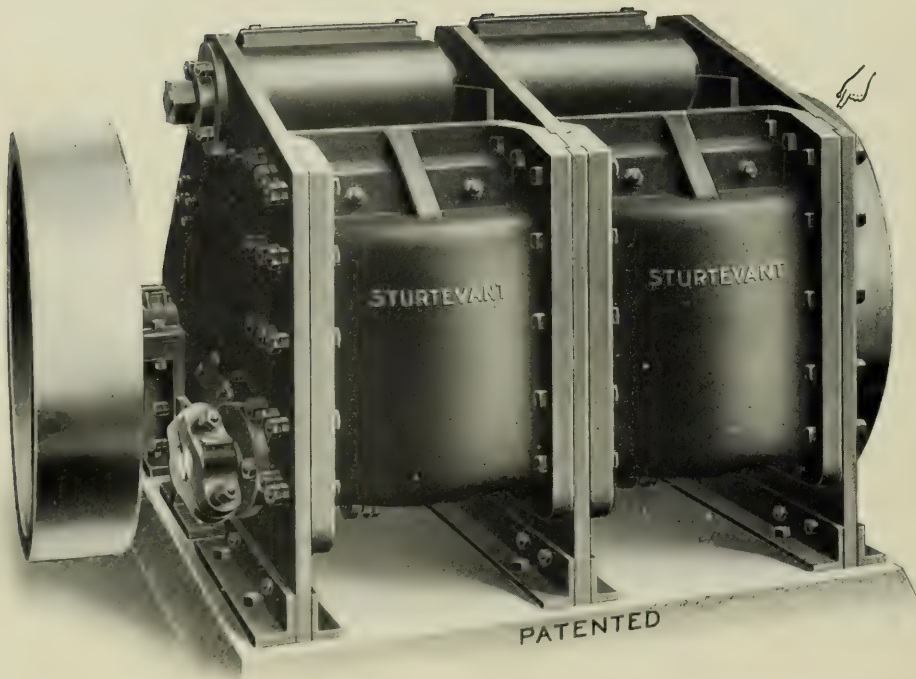
Plate Steel Roll Jaw Crusher For Fine Crushing (1-2 inch)

The Jaw wear of all these Crushers is taken up by one toggle (different lengths being furnished); or in the Roll Jaw Crushers and Smashers may also be taken up by placing shims back of either jaw plate, or back of the toggle seat, as may be found most convenient.



**Sectional View
Plate Steel Roll Jaw Fine Crusher**

STURTEVANT MULTI-JAW CRUSHERS

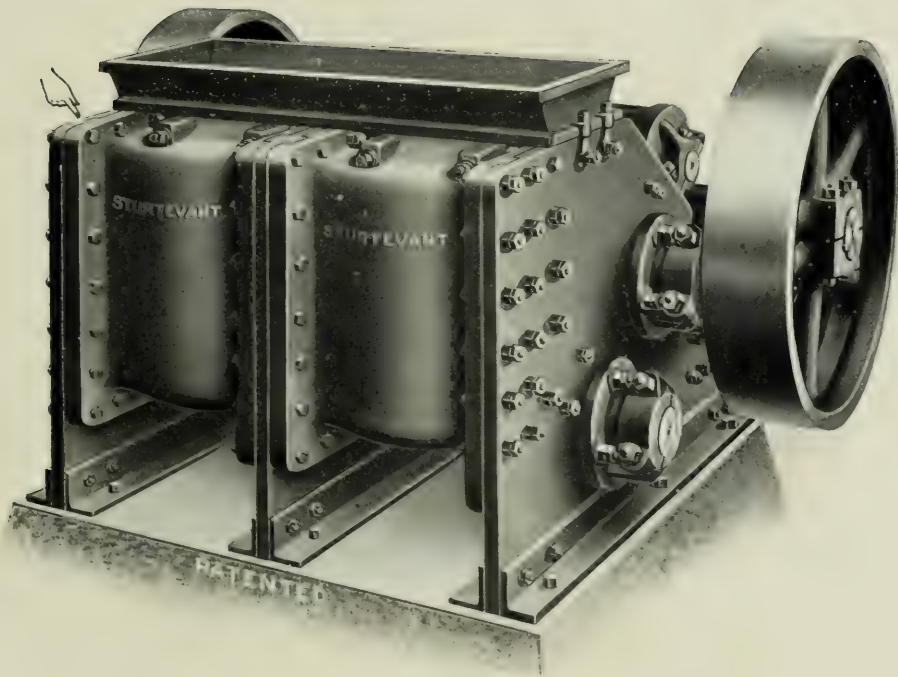


Large Duplex Plate Steel Breaker

GREAT ADVANTAGES OF MULTIPLE JAW CONSTRUCTION

This is the greatest improvement made in Breakers required to give largest outputs. It is only by extending the width of the discharge opening that the regular product of any crusher can be largely increased. A single jaw of excessive width is however a weak proposition, unless made so enormously heavy that it is unsaleable.

STURTEVANT MULTI-JAW CRUSHERS



7 x 48 Duplex Plate Steel Crusher

GREAT ADVANTAGES OF MULTIPLE JAW CONSTRUCTION

But Sturtevant Multiple Jaw Crushers with very wide jaws are made and sold at moderate prices, and are far stronger and better than any other Crusher whatever.

Because each jaw is only one-half as long as a jaw reaching across the whole front of the machine, it is four times as strong as such a long single jaw would be.

STURTEVANT MULTI-JAW CRUSHERS

GREAT ADVANTAGES OF MULTIPLE JAW CONSTRUCTION

All Sturtevant Multiple Jaw Crushers have a rolled steel middle plate as well as side plates. They have such perfect balance that the largest machines run quietly on the upper stories of any strong mill building, and do not require unusual foundations anywhere. All shafts of the Sturtevant Multiple Crushers have middle bearings. No other Duplex Crushers have these much needed middle supports, and this driving shaft has all three bearings in one massive rear cross beam. No disturbance of this shaft's adjustment is possible. The rear casting is not inferior in strength to the front jaw casting. In no other Duplex Crusher can perfect shaft alignment be assured, nor proper strength attained.

Sturtevant Multiple Jaw Machines are massive in every part, and give more than double outputs, because they are in such perfect balance that they can be run faster than any single Breaker whatever. They can also crush finer, because in faster running the passing rock is given many more nips before it can escape. Sturtevant Multiple Crushers have fewer frictional parts than any single machines, and having the double cam and roll action (which is not affected by grit) they run with less expenditure of power than common breakers, and do not require large or heavy balance wheels.

The broad base of Duplex Crushers gives unusual support, and since—heavy as they are—they are yet far lighter and less expensive than two single machines, and are equally capable of being knocked down to easily-handled parts, they are always preferred by large producers.

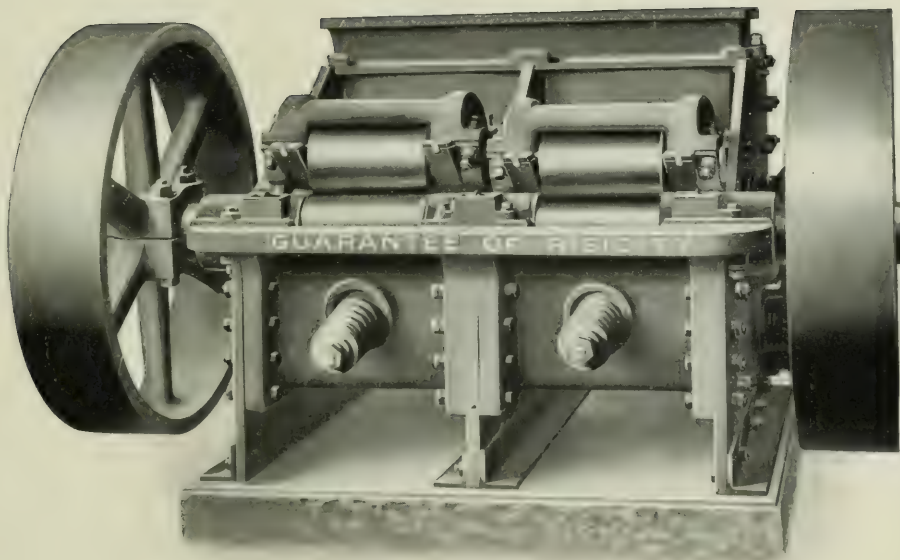
Should, for any reason, less output be desired for a time, it is only necessary to remove a toggle or two, of a Multiple Jaw Crusher, and thus stop the work of one or more of the jaws; this of course reduces the capacity, and also the power required to run in equal degree.

Duplex Crushers not only use less power than two single machines (because they have fewer frictional parts) but they are certainly better. A large single Crusher to equal a Duplex in capacity would require a jaw of the combined width of two Duplex jaws, and this would require four times its massiveness; and because the shocks come all at once on the full width of a single jaw, that single jaw requires an immensely greater strength, and of course absorbs much operative power.

But the stresses of Duplex Crushers are at all times divided between the two jaws, each one taking only half of the work at any one time. Duplex Crushers, therefore, operate more easily; because the stresses have only half the intensity of any single machines. The same advantages apply—even more—to triplex and quadruplex Crushers. These cost less, are stronger, and last longer than single Crushers of any type.

Sturtevant Multiple Jaw Crushers can be made of any size. They are patented and cannot be duplicated. The improvements noted are of exceptional importance and will not escape the notice of the most careless buyer. We invite criticism of these remarkable balanced Crushers; bad points are hard to discover in them.

STURTEVANT MULTI-JAW CRUSHERS



Patented

Rear View of Duplex Design

STURTEVANT PLATE STEEL CRUSHERS

COST OF FINE CRUSHING

Crushing is the one step in rock reduction that is not very costly. Therefore as great reduction as is practicable should be done in Crushers. "Crushing generally costs only one fifth as much as grinding;" it pays therefore to install such machines as will smash to the finest economical limit. Rolls and a great variety of rock reducers, work faster and better and with decreased wear if given a fine and evenly-crushed feed. Two pairs of Rolls receiving 4" rock cannot do as fine work as one Roll Jaw Fine Crusher. We make no account here of foundations, elevators, screens, shafts and pulleys that are required with these three large machines to reduce to the same fineness as is produced by a single Sturtevant Crusher breaking fine, directly, without any screens or other auxiliary machinery whatever. Think of the cost of unnecessarily multiplying machines, and the transportation, cartage and setting-up expenses added; and also the power to run, labor, up-keep, etc., compared with the items required for a single Sturtevant Fine Crusher.

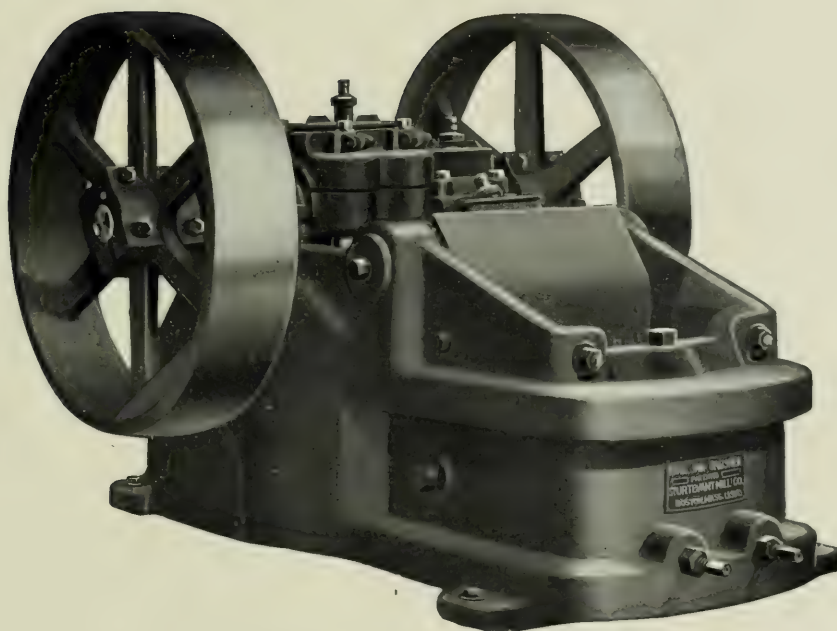
SIMPLE PLANT

It is often important to avail of fine crushing in small plants, for every elevator, pulley, belt, etc., eliminated, represents money saved, not only in first cost, but also in operating expenses. Everything in contact with ore must wear; everything that transmits power must be replaced sooner or later. If one machine can do the work of two or three, the repairs saved may soon pay for it. Crushers of the Blake or Gyratory type cannot reduce rock to advantage to a size less than 2"; or those like the Dodge to a size less than 1", in regular and economical production. If fine work is required it is clearly to your advantage to buy Roll Jaw Crushers. If intermediate crushing is desired, the Rock and Ore Smashers have no competitors, for no other Intermediate Crusher can compete with them for strength, reliability, durability, capacity, or cost.

We hope it has been made clear in these pages why Sturtevant Breakers and Crushers are better than any others. They are stronger in every part, and simpler. Because of rolling friction and slow speed, and less vibration, they run easier and last longer. All wearing surfaces are of greater size. The moving parts are of steel, and they are absolutely rigid and yet portable. All our patrons note these advantages, and no testimony is more valued than that of a satisfied customer of large experience.

Ask Users.

STURTEVANT LABORATORY CRUSHERS



4 x 8 Cast Iron Roll Jaw Fine Crusher

LABORATORY CRUSHERS

For smaller outputs of finely-crushed rock or ore, the above Roll Jaw Crushers are unique. They are largely used in big laboratories, sampling works, etc. The jaws of the machine above shown may be set as close as $\frac{1}{4}$ inch; then the product is of such fine and uniform quality as is unapproached by other Crushers.

These smaller Crushers are of the Pitman type, and the jaws have a true roll on the material, and as they do not appreciably advance and recede at the discharge opening, their output is fine and even.

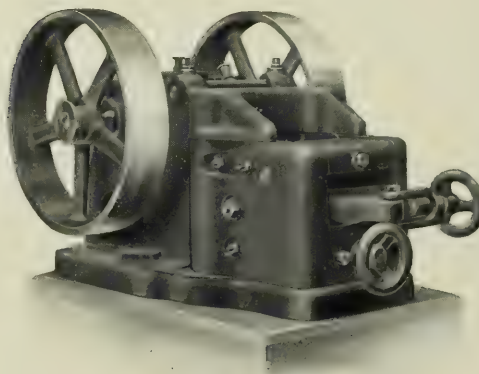
The jaw plates are of Manganese Steel, the bearings and shafts large, and thoroughly protected from dust.

For capacity and specifications see last page.

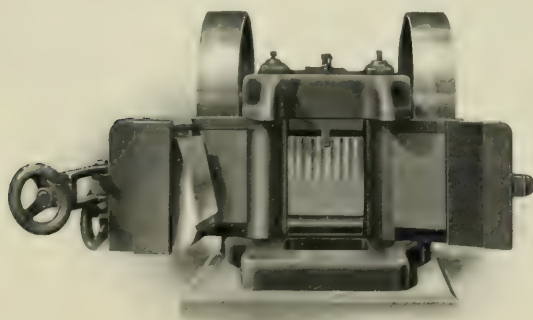
STURTEVANT LABORATORY CRUSHERS

LABORATORY CRUSHERS

The illustrations on this page show the design and construction of Laboratory Roll Jaw Fine Crushers, which are similar to the 4 x 8 size shown on the opposite page. These are designed to be thoroughly accessible for cleaning, and in every respect these little machines are built as well as the full-sized Crushers. The wearing parts are of Manganese Steel, the toggles of hard bronze working in steel seats, and the ample shafts turn in large, well-oiled and dust-proof bearings.



2 x 6 Roll Jaw Fine Crusher



2 x 6 Roll Jaw Crusher open for cleaning

It is really too large to run by hand, but can be if desired.

Hundreds of these little Crushers are in successful operation in many of the largest mines, laboratories, assayers' offices, mining schools, etc., both in this country and abroad. They crush to practically sand-size rapidly and economically. They will take in any rock that can enter their jaw opening, and are amply strong to withstand hard usage.

Full Specifications on last page.

S P E C I F I C A T I O N S

Sturtevant Steel Rock and Ore Breakers

Size Jaw Opening inches	Capacity in tons per hour Jaws set apart 2 inches	Horse Power Approx.	Speed rev.	Pulley in.	Approx. Weight of Heaviest Piece	Approximate Weight Net	Approximate Weight Gross
*Bligo 8 x 10	6 to 10	10-12	160	30 x 6	1,370 lbs.	3,500 lbs.	4,000 lbs.
*Bleednap 10 x 15 Heavy Duty	12 to 18	15	155	48 x 10	1,210 lbs.	11,000 lbs.	12,000 lbs.
*Blartant 12 x 26 Heavy Duty	25 to 40	25	140	†60 x 10	2,660 lbs.	22,500 lbs.	25,000 lbs.

These crushers are ordinarily fitted with chilled jaws but can be fitted if desired, with manganese steel jaws at an extra cost.

Rock Smashers and Roll Jaw Fine Crushers

SIZES	Approx. Capacity in tons at Specified Jaw Settings				Rev.	Pulley	Horse Power	Length	Width	Height	Heaviest Piece	Approx. Weight Net	Approx. Weight Gross
	Jaws Set Apart	Per Hour	Jaws Set Apart	Per Hour							Approx. Weight lbs.	Total Approx. lbs.	Total Approx. lbs.
Receiving Opening					Per Minute	Diam. and Face in inches	Est. Average	Extreme	Extreme	Extreme			
Laboratory 2 in. x 6 in. *Baer	½ in.	250 lbs. to 600 lbs.	1 in.		350	18x 4	¼	2' 3"	1' 10"	1' 8"	300	700	845
4 in. x 8 in. *Barto	½ in.	½ to 1	1 in.		350	30x 4	2 to 3	3' 7"	3' 2"	2' 11"	1,200	2,500	3,000
5 in. x 10 in. *Beno	½ in.	1 to 2	1 in.	2 to 4	170	30x 6	3 to 4	4' 10"	3' 0"	3' 4"	425	3,500	4,000
6 in. x 15 in. *Botox	½ in.	2 to 4	1 in.	4 to 8	160	36x 8	8 to 10	6' 0"	4' 7"	3' 9"	800	7,000	8,000
7 in. x 24 in. *Batten	½ in.	4 to 5	1 in.	8 to 12	150	48x10	15 to 20	7' 1"	5' 6"	4' 7"	2,100	14,000	15,000
6 in. x 30 in. Duplex *Boater	½ in.	5 to 8	1 in.	8 to 16	160	36x 8	12 to 20	6' 0"	6' 0"	3' 9"	800	13,000	15,000
6 in. x 45 in. *Boatts	½ in.	7 to 12	1 in.	12 to 20	160	36x12	30	6' 0"	7' 6"	3' 9"	800	18,000	21,000
7 in. x 48 in. Duplex *Bating	½ in.	8 to 12	1 in.	16 to 24	150	48x10	30 to 40	7' 1"	7' 10"	4' 7"	2,100	26,000	29,000
6 in. x 60 in. *Boatum	½ in.	10 to 16	1 in.	18 to 32	160	36x16	40	6' 0"	8' 11"	3' 9"	800	24,000	27,000
7 in. x 72 in. *Batus	½ in.	12 to 18	1 in.	24 to 36	150	48x15	45 to 60	7' 1"	10' 2"	4' 7"	2,100	37,000	42,000

* Code Word.

† Belted from both fly wheels.

All sizes larger than 4 x 8 have Steel Plate construction and Double Cam and Roller action; all sizes smaller are of Cast Iron with Pitman.

The fineness of breaking and crushing is measured by the minimum distance between the jaws, i. e., ½ inch crushing means jaws set ½ inch apart at closest point of discharge; 2 inch crushing means jaws set 2 inches apart at closest point of discharge, etc.. etc.

All Capacities in this Catalogue are based on actual tests crushing Hard Quincy Granite.

Designs, Sizes, and Prices subject to change without notice.

CATALOGUE NO. 62A